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INFORMATION REPORT

PREPARED AND DISSEMINATED BY
CENTRAL INTELLIGENCE AGENCY

COUNTRY
Hungary

SUBJECT
Types of Radar/IFF Antenna/Anti-Aircraft School

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SUPPLEMENT TO REPORT # 25X1

THIS IS UNEVALUATED INFORMATION

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This report is the result of a joint collection effort by the Air Force, the Army and CIA and is disseminated in accordance with the provisions of NSCID #7.

ARMY review completed.

USAF review completed.

1. Duna is the Hungarian name given to a short range warning and artillery fire control radar set very well known in Hungary. It is estimated that approximately 60 to 65 such sets are in existence in the country. The secret name given to this equipment is "MOSZT-2" which is only found on top secret blueprints and nomenclatures.

2. Following are the technical and operational characteristics of this set:

Operating frequency: 3,000 Mc/s
Approximate range: 80 kilometers
Type oscillator: Magnetron
Type antenna: Double deck, four horizontally polarized, six-element Yagi arrays
Type scope: PPI-6
Power supply: "Czonka" Hungarian-make motor turning a 110-volt (dc) generator.

3. Although the performance of Duna is very satisfactory, the operating personnel seem to have difficulties because of breaking of the antenna elements or because of faulty parts such as tubes, resistors, condensers, etc.

4. Drava is the Hungarian name given to a modified US type anti-aircraft fire control radar set. There are approximately 20 Drava sets in operation in the country. "SZON-4" is the secret name given to this set which is found only on top secret blueprints and nomenclatures.

5. Drava has the following technical and operational characteristics:

Operating frequency: 3,000 Mc/s
Ranges: 55 Km for warning and 35 Km for fire control
Scope type: PPI-6
Oscillator: Magnetron
Antenna: Parabolic reflector
Power supply: 110 volts dc

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6. This equipment is capable of directing a group of four to six 85 mm anti-aircraft guns simultaneously, and has these advantages over the original US set:

(a) A third beam called the micro-beam (30 to 45 meters narrow) for better focusing.
(b) Automatic target-selecting capability
(c) Automatic fire synchronization with anti-aircraft batteries.

7. Hungary is manufacturing these sets for other satellite countries. 25X1

8. "SZON-9" Anti Aircraft Radar

a new type of Soviet-built anti-aircraft radar set called "SZON-9" (Secret name) which is said to be much more accurate than the Drava. This equipment weighs about 30 tons and is mounted on a van. 25X1

FMV, the Hungarian Precision Mechanical Industry, is being given the responsibility for the manufacturing of these sets.

9. The P-20 is a huge Soviet-built early-warning and ground control intercept radar used by most of the satellite countries. It is a rugged piece of equipment and can be used on any type of terrain. The complete installation of this set is composed of five units. (1) The antenna trailer, (2) the transmitter truck, (3) the receiver truck, (4) the power-generating truck, and (5) a maintenance truck. The P-20 has a maximum reliable range of about 300 kilometers and uses 5 magnetrons in the oscillator stage.

IFF (Identification Friend or Foe) System

10. NRZ is the name of this Soviet-manufactured equipment which is usually used in conjunction with P-20 type radar. The antenna, which consists of two vertically polarized Yagi arrays mounted in parallel and backed by a screen reflector, is installed at an approximate distance of 100 to 200 meters from the P-20 installations. Both the NRZ and P-20 antennas have a synchronized rotating system. A small motor placed underneath the antenna elements of the NRZ serves to rotate the mechanism. No personnel is required at the NRZ site. Aircraft are identified by means of certain types of radio signals generated by the planes and picked up by the NRZ antenna and transmitted to the receiving unit of the P-20 through coaxial cables.

Anti-Aircraft School in Budapest

11. This is an officers' technical school called the Kossuth Academy located at 133 Ulloi Street, in the 9th district of Budapest, where radar, field artillery and anti-aircraft technical and tactical courses are taught. Radar classes require three years for graduation. The courses taught consist of the following: First Year: beginners' class basic radar courses, 25 students; Second Year: anti-aircraft and short and long range radar warning courses, 32 students; Third and last year: anti aircraft and radar warning courses, 40 students.

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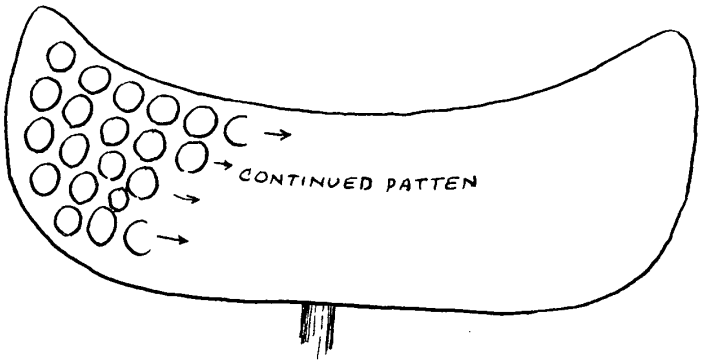
1. Sketch of the Duna radar antenna
2. Source's sketch of SZON-9 anti-aircraft radar
3. Sketch of the P-20 early warning radar setup.
4. Sketch of IFF antenna.

- end -

IRA 71 "DUNA" RADAR ANTENNA

ANNEX 1

IRA · 71



[redacted] SKETCH "SZON-9" ANTI-AIRCRAFT RADAR

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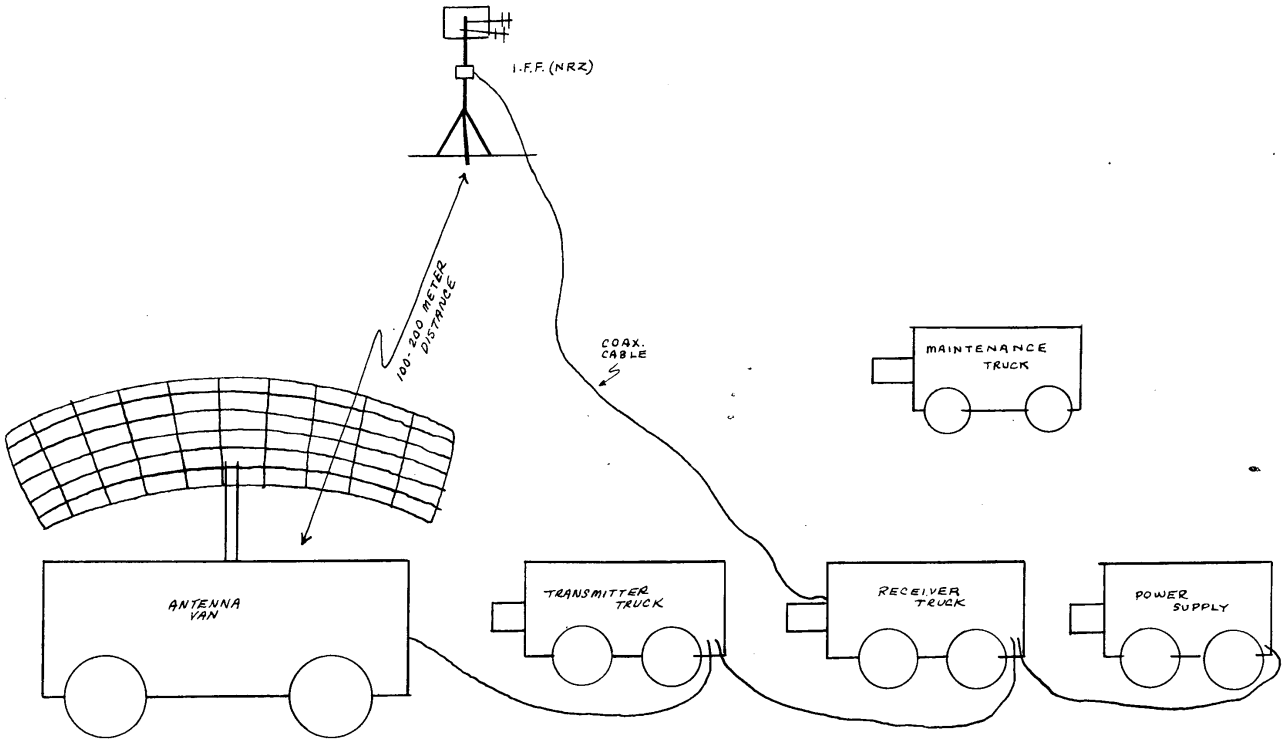
ANNEX 3



IRA 71 "P-20" EARLY WARNING RADAR SET-UP

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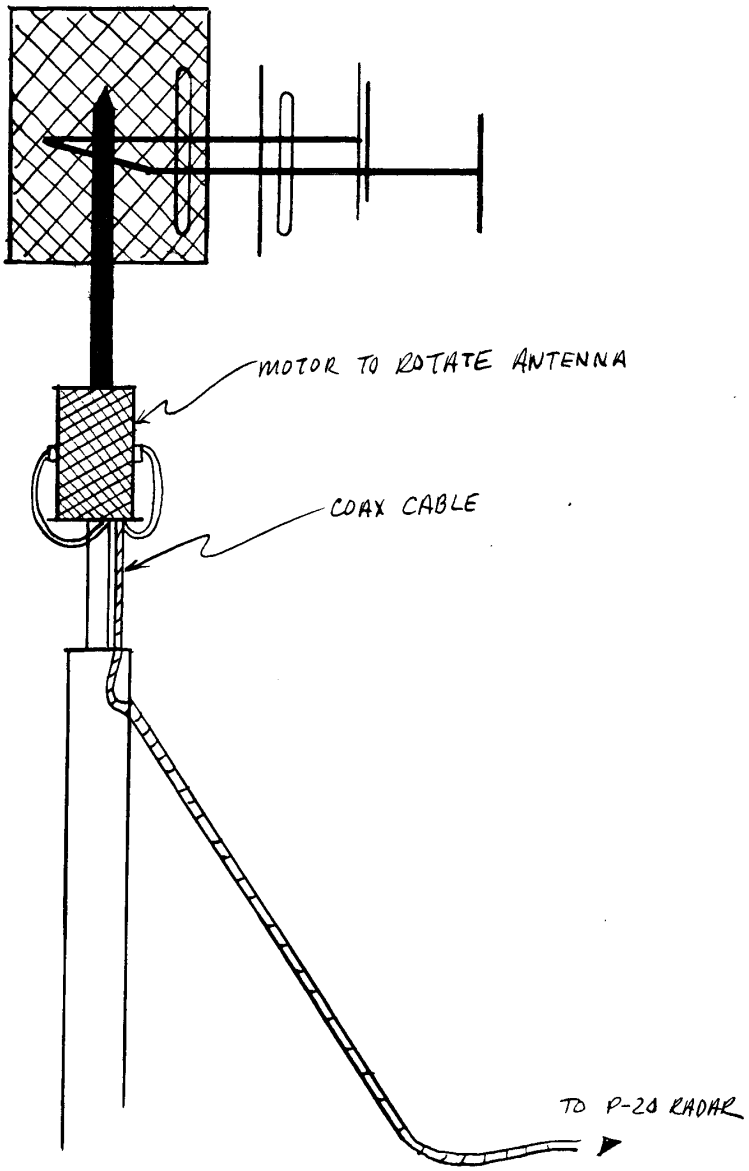
IRA 71 I.F.F. (CODE NAME "NRZ") ANTENNA



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ANNEX 4